

EMC components

World's smallest common-mode choke for CAN and FlexRay

- Wide operating temperature range from -55 °C to +150 °C
- Manufactured with fully-automated processes for high reliability and consistent quality

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TDK Corporation presents the new ACT1210 series of common-mode chokes for both CAN and FlexRay bus systems. With their compact dimensions of just 3.2 mm x 2.5 mm x 2.4 mm, the chokes are the world's smallest. Their footprint is approximately 45 percent smaller than that of existing components, while their volume has been more than cut in half. Rated for a wide operating temperature range from -55 °C to +150 °C, the new ACT1210 series offers high heat resistance and reliability, making it suitable for use under severe conditions such as those encountered in the engine compartment of a vehicle. Mass production of the components, which are qualified to AEC-Q200, will begin in December 2013.

The new series of common-mode chokes, which employs a further improved ferrite, is based on the joint technology competence of TDK and EPCOS in the area of EMC. Thanks to the unique structural design of the new series, the components are manufactured using a high-precision autowinding process, which contributes to their high stability and reliability and at the same time ensures their consistent quality.

The series joins the existing ACT45B series for CAN, the ACT45R series for FlexRay, and the new ACT45L series for automotive Ethernet, resulting in a highly versatile lineup of high-performance common-mode chokes for EMC in automotive bus systems.

Main applications

- Common-mode chokes for both CAN and FlexRay automotive bus systems

Main features and benefits

- With compact dimensions of 3.2 mm x 2.5 mm x 2.4 mm the world's smallest common-mode choke for CAN and FlexRay
- Wide operating temperature range of -55 °C to +150 °C for high heat resistance and reliability under severe conditions such as those encountered in the engine compartment
- Manufactured with fully-automated processes for high reliability and consistent quality
- Qualified to AEC-Q200

Key data

Type	Common-mode impedance [Ω] *min.	Common-mode inductance [μH] **	DC resistance [Ω] max.	Insulation resistance [MΩ] min.	Rated current [mA DC] max.	Rated voltage [V DC] max.
ACT1210-110-2P	300	11	0.4	10	0.30	80
ACT1210-220-2P	500	22	0.5	10	0.25	80
ACT1210-510-2P	1000	51	0.7	10	0.20	80
ACT1210-101-2P	2200	100	1.5	10	0.15	80

* at 10 MHz

** at 100 MHz +50/-30 %

About TDK Corporation

TDK Corporation is a leading electronics company based in Tokyo, Japan. It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK's portfolio includes electronic components, modules and systems* marketed under the product brands TDK and EPCOS, power supplies, magnetic application products as well as energy devices, flash memory application devices, and others. TDK focuses on demanding markets in the areas of information and communication technology and consumer, automotive and industrial electronics. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2013, TDK posted total sales of USD 9.1 billion and employed about 80,000 people worldwide.

* The product portfolio includes ceramic, aluminum electrolytic and film capacitors, ferrites, inductors, high-frequency components such as surface acoustic wave (SAW) filter products and modules, piezo and protection components, and sensors.

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